
CRITTENDEN COUNTY

(Crittenden County Water Service Area Map)

- Estimated 1999 population of 9,350--70% on public water
- Estimated 2020 population of 8,950--91% on public water
- 185 miles of water lines, with plans for 250 additional miles
- Estimated funding needs for public water 2000-2005--\$10,326,000
- Estimated funding needs for public water 2006-2020--\$0

Crittenden County had an estimated population of 9,354 (3,955 households) in 1999 with a projected population of 8,955 (4,108 households) in 2020. Public water is provided to over 2,990 customers, or about 70 percent of the county's residents. In areas of the county not served by public water, about 5 of 8 households rely on private domestic wells and 3 of 8 households rely on other sources. About 870 households will be added to public water service through new line extensions in 2000-2020.

Estimated Costs - Proposed Projects, 2000-2005

COUNTY/System		New Customers		Rehab	Source	Treatment	Tanks/ Pumps	Total
	Miles	Number	Cost in \$1000	in \$1000	in \$1000	In \$1000	in \$1000	in \$1000
CRITTENDEN								-
Crittenden/Lyon W/D	248	867	7,326				3,000	10,326
TOTAL	248	867	7,326				3,000	10,326

PUBLIC WATER SYSTEMS

Crittenden County residents are served by two public water systems, the City of Marion Water/Sewer System, which services 1,730 customers and the Crittenden-Livingston Water District which serves 1,260 customers in Crittenden County. The Marion Water and Sewer Department has 860,000 gallons per day treatment capacity. Total county storage capacity is 1,950,000 gallons.

MARION WATER DEPARTMENT

PWSID: 0280267
System Type:..... COMMUNITY
Owner Type: MUNICIPAL
Surface Source:.....MARION OLD CITY LAKE
Purchase Source:
Well Source:
Sells Water to:

WATER SERVICE AREAS

CRITTENDEN COUNTY

Kentucky

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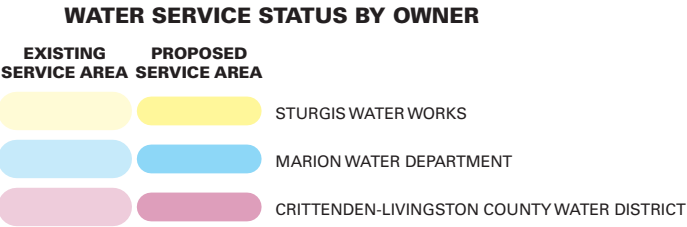
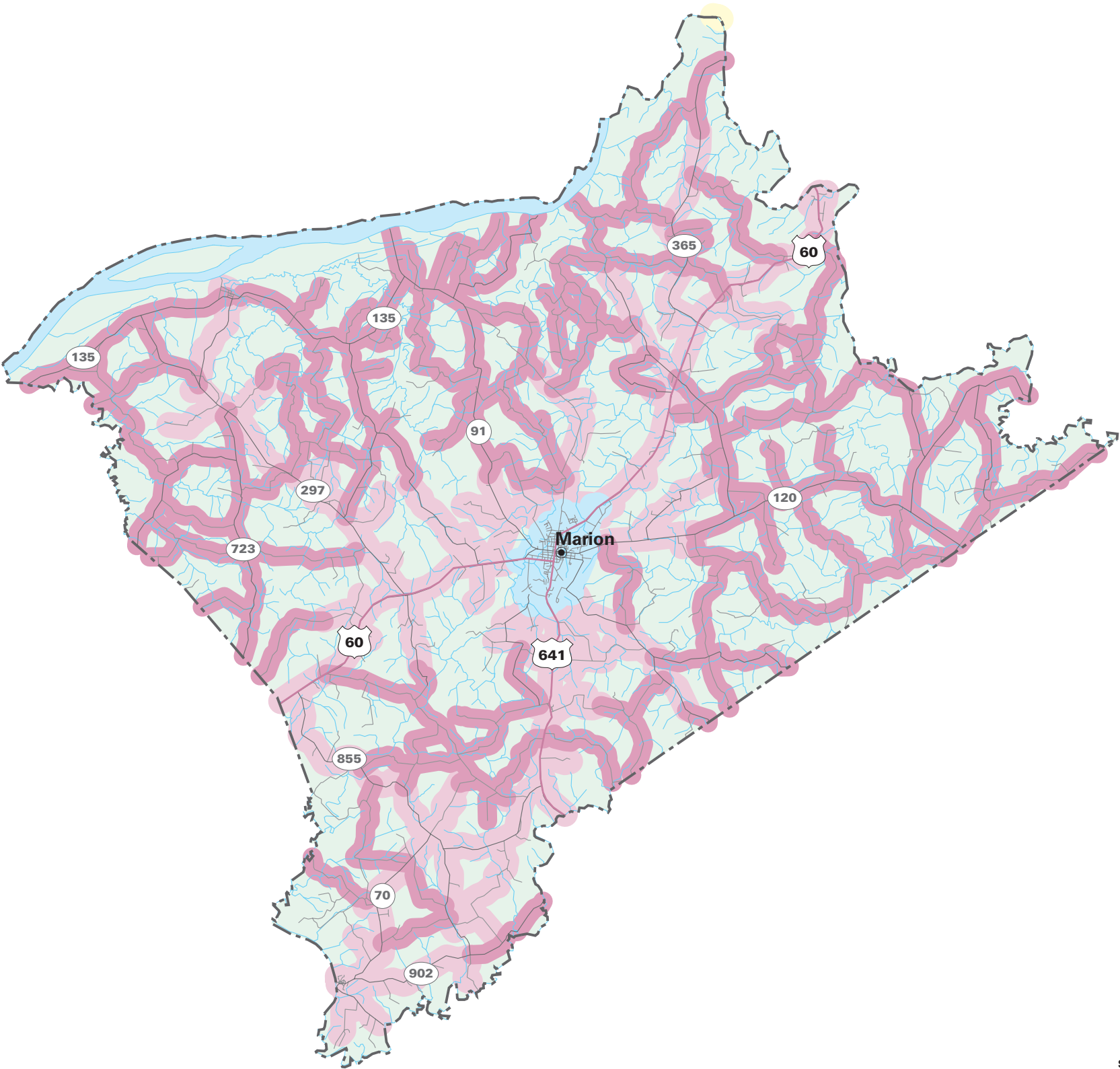
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Treatment Plant Capacity (MGD):.....	0.86
Percent Daily Average Production:	65.00
Total Tank Storage Capacity (gallons):.....	1,200,000.00
Total Service Connections:	1,730.00
Number of Employees:.....	4.00
Treatment Operator Class:.....	2D
Distribution Operator Class:	3A
Customer Rate for 1,000 Gallons:.....	Not available
O/M costs 1997:.....	Not available
O/M costs per Service Connection:	Not available
Net Revenue 1997:.....	Not available
Total Water Produced 1997 (gallons):.....	Not available
Water Sold 1997 (gallons):.....	Not available
Unaccounted-for Water 1997 (%):	Not available

The City of Marion's water source is two lakes—Lake George and City Lake located on the Crooked Creek Watershed. The water treatment plant, constructed during the early 1990's, has a capacity of 864,000 gallons per day. Utilization presently averages over 61%. Storage consists of a clear well with a capacity of 266,000 gallons and two storage tanks with a total capacity of 1,200,000 gallons. The distribution system is remarkably tight, with water loss or non-revenue production of less than 2%. The City serves 1,730 customers (1,613 households), most of which live in the city limits. The City has an agreement with the Crittenden-Livingston Water District to draw treated water from one another in the event of an emergency. The Crittenden County Water Supply Plan indicates moderate growth for the City of Marion through the year 2010. Water usage will increase by approximately 20%. Factors not considered when the Water Supply Plan was written include two major expansions of Siemens and Par-4 Plastics, which may cause projections to change and create a larger demand for water.

CRITTENDEN-LIVINGSTON WATER DISTRICT

The Crittenden-Livingston Water District is located in Livingston County and is the only multi-county district in the Pennyrile. While other systems may serve customers in other counties, this is the only District organized and managed by a Board with representatives appointed by the respective fiscal courts of each county. The District presently has a 500,000-gallon per day water treatment plant, which is scheduled to be increased to 2.0 million gallons within the next year. With funds in place, the new plant will extend service to 100 households in Crittenden County and 200 households in Livingston County. In

addition, it will replace the water treatment plant in Smithland (Livingston County) and supplement and eventually replace treatment plants in Grand Rivers and the Ledbetter Water District. Currently, the District serves 1,260 customers in Crittenden County and 630 customers in Livingston County. The treatment plant is operating at 75% of capacity and on peak days near 90% of capacity. The plant's source of raw water is the Cumberland River, which is adequate to meet current and future needs. Storage consists of a clear well and three water tanks with total capacity of 750,000 gallons. The distribution system is relatively new, constructed in the early 1980's. According to the Water Supply Plan for Crittenden County, the existing water plant should be expanded in order to meet future needs. Plans are currently underway to meet this need. Engineers are completing the design and will be letting the contract for construction within the next few months. Although water coverage is quite thorough in Crittenden County part of the Crittenden/Livingston Water District territory, the Shady Grove area in the southwestern part of the county is currently without services. The system had gross revenue of \$600,725, operating and management cost of \$344,226 and net revenue of \$93,162 for the period 01/01/97-12/31/97. The charge for the first 5000 gallons of water was \$31.22. Overall system losses were 10.6% for the same period. Operating and management costs per service connection are \$182.

PRIVATE DOMESTIC SYSTEMS

About 2,800 people in Crittenden County rely on private domestic water supplies: 1,750 on wells and 1,050 on other sources.

On the northern edge of Crittenden County wells in the alluvium of the Ohio River Valley yield several hundred gallons per minute with compound horizontal wells having a potential yield as high as 5,000 gpm. In the western three-quarters of Crittenden County most of the drilled wells in the uplands are adequate for a domestic supply. Yields as high as 50 gpm have been reported from wells penetrating large solution channels or fault zones. In the low-lying areas of Claylick and Livingston Creeks and the tributaries to the Ohio River, most wells are inadequate for domestic use unless the well intercepts a major solution opening in the limestone in which the yield could be very large. Ground water in the sandstone and shale rich eastern quarter of the county is not as prevalent as in the rest of the county which is

predominately limestone. Most wells in the eastern part of the county are inadequate for a domestic supply, however some wells in sandstone formations yield enough water for a domestic supply when located in areas bordering streams.

Springs with flows ranging from a few gallons per minute to 1,400 gpm are found in the county. Minimum flow generally occurs in early fall, maximum flows in late winter.
